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What you can do

- List and map all the invaders in your area and find out how to control each invader.
- Do not move any aquatic plant or animal (including fish) from one water body to another.
- Never release unwanted pets into the wild.
- Abide by the regulations regarding the transportation of plant and animal material.



Useful addresses

The Southern African Plant Invaders Atlas (SAPIA). ARC-PPRI, Weeds Division. c/o SANBI, Private Bag X101, Pretoria, 0001. Tel (012) 843 5035; E-mail L.Henderson@sanbi.org.za; Website www.agis.agric.za/wip

Department of Agriculture, Forestry and Fisheries. Private Bag X250, Pretoria, 0001. Tel (012) 319 6000; Fax (012) 319 0000; Website www.daff.gov.za

WESSA "Stop the Spread". An invasive alien species awareness campaign, facilitated by WESSA KZN. Tel (031) 201 3126 or 266 2603; E-mail stopthespread@wessa.co.za

Further reading

Alien Weeds and Invasive Plants. 2001. L. Henderson. PPRI Handbook No. 12.

Invaded. The Biological Invasion of South Africa. 2009. L. Joubert. Wits University Press: Johannesburg.

Invasive Alien Plants in KwaZulu-Natal: Management and Control. 2008. WESSA KZN Branch.



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Please write to: Share-Net, Enviro Facts Project, PO Box 394, Howick, 3290. Tel (033) 330 3931 ext 124/144; Fax (033) 330 4576; e-mail sharenet@wessa.co.za

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seeking to live more sustainably.

Indigenous, Alien & Invasive Aliens

Indigenous. An *indigenous* plant or animal is one which occurs naturally in the place in which it is currently found, and has not been assisted in its travels by people. The indigenous concept does not refer only to a geographical (or political) area but also applies to habitats. For example, the birds indigenous to dry thornveld (a type of habitat) are very different from the birds indigenous to mistbelt forest, even though they may be only 10km apart. Similarly, many fish are indigenous to a certain part of South Africa and can become *invasive* (see below) if moved to another river.

An *endemic* species is not only indigenous, but is *restricted* to a particular area. The Blue Crane, for example, is indigenous to southern Africa, and is found nowhere else. This makes it endemic. The Wattled Crane is also indigenous, but it is not endemic to southern Africa as it is also found further north in Africa. Threatened endemics are a conservation priority (see Enviro Facts *Biodiversity*).

Alien. A species which does not occur naturally in an area (is not indigenous), but which has been introduced there by people, is called an *alien*. Sometimes people use the word *exotic* instead of alien, but this is not the best word as it has many other meanings.

Invasive Aliens, Indigenous Bush Encroachment and Weeds

A few alien species reproduce and spread, unassisted by people, into natural, undisturbed areas. These *invasive aliens* pose a serious

threat to indigenous biodiversity. Expensive and drastic measures are required to control invaders.

Plant invaders that replace indigenous vegetation, or drastically change the habitat, are called *transformer species*.

Plants that grow where they are not wanted, are called weeds.

Invasive alien plants should not be confused with *pioneer plants* or *indigenous bush encroachers*, both of which colonise disturbed areas only.

Pioneer plants can be either alien or indigenous plants that are adapted to colonize denuded and disturbed areas. They complete their life cycle in a short time, before other plant species arrive in an area. They are then gradually replaced by other plants, a process known as *succession*. Pioneer plants play an important role as they change a harsh environment into one more suited for plant life, after which they gradually disappear. Pioneer plants include blackjack, khaki weed, cocklebur and thorn apples.

Bush encroachers are indigenous trees or shrubs that increase in number when their environment changes. For example, if the natural grass cover in savannah areas is thinned out through overgrazing, drought or injudicious fires, the fuel load of the area is too low to sustain fires hot enough to kill the excess seeds and seedlings of the indigenous woody species. As a result, large numbers of these seeds will germinate and survive and, without competition from grasses, trees and shrubs become the predominant plant species. Sweet thorn (*Acacia karroo*) and sickle bush (*Dichrostachys cinerea*) are examples of bush encroachers. In contrast, invasive alien plants have the ability to encroach on undisturbed, pristine areas and to displace the indigenous vegetation.

Why do some aliens become invasive? There are several reasons: firstly, aliens that find themselves in an environment different from that in which they evolved might find such a drastic change fatal, but in conditions similar or superior to those in their native land, they flourish; secondly, an alien animal or plant is normally free of the diseases, parasites and predators which keep its numbers in check in its home environment; thirdly, they reproduce easily and in plant species often have multitudes of wind-borne seeds. Under these conditions, populations can explode with the

invaders overwhelming the indigenous fauna and flora, by crowding them out, by competition for resources, or by predation.

In southern Africa, few mammals have become invaders. Alien fish, however, invade and pose a serious threat to the indigenous fish of our inland waters. For example, smallmouth and largemouth bass, and brown and rainbow trout, prey heavily on indigenous fish. Fish species are sometimes moved from one river to another, where they can out-compete, prey on, or even hybridize with the fish species that evolved in, and are indigenous to that river system. For example, anglers are moving the catfish (*Clarias gariepinus*), indigenous to the Orange River, to many other rivers in the Eastern and Western Cape where it is causing extinctions of indigenous and endemic fish species. Alien fish parasites introduced through the aquarium trade cause many problems so do not throw your unwanted aquarium fish into water courses!

Plant invaders are plentiful, especially in the southwestern Cape, KwaZulu-Natal, and Mpumalanga. Cape fynbos (see Enviro Facts *Fynbos*), a unique floral kingdom, is severely threatened by Australian acacias, which were originally introduced for timber, bark products, or to stabilize sand dunes. In the Eastern Cape, KwaZulu-Natal, and the Mpumalanga lowveld the worst invaders are lantana, chromolaena (triffid weed), syringa and pereskia (Barbados gooseberry), black wattle, prickly pear, bugweed, and bramble. Many rivers and dams are clogged with water hyacinth, Kariba weed or parrot's feather. Highveld areas suffer most from wattle and bramble, and the arid west is being invaded by mesquite.

Thousands of alien species have been introduced into southern Africa but only a small number have become invasive. None of these plants and animals cause problems in their native lands. Their invasive qualities were unsuspected, which goes to show that no alien plant or animal should ever be released into the veld without screening for its invasive potential.

Legislation. Legislation regarding problem plants forms part of the Conservation of Agricultural Resources Act (CARA). Regulation 15 addresses the spread of invasive alien plants and makes provision for three groups of problem plants: Category 1 - plants are prohibited and must be controlled. Category 2 (commercially used plants) - may be grown in demarcated areas providing that there is a permit, and that steps are taken to prevent their spread. Category 3 (ornamentally used plants) - may no longer be planted; existing plants may remain, as long as all reasonable steps are taken to prevent them spreading, except within the flood line of watercourses and wetlands. Indigenous bush encroachers are covered by Regulation 16. For a full list of species under CARA, contact

the Department of Agriculture, Forestry and Fisheries, address on the following page.